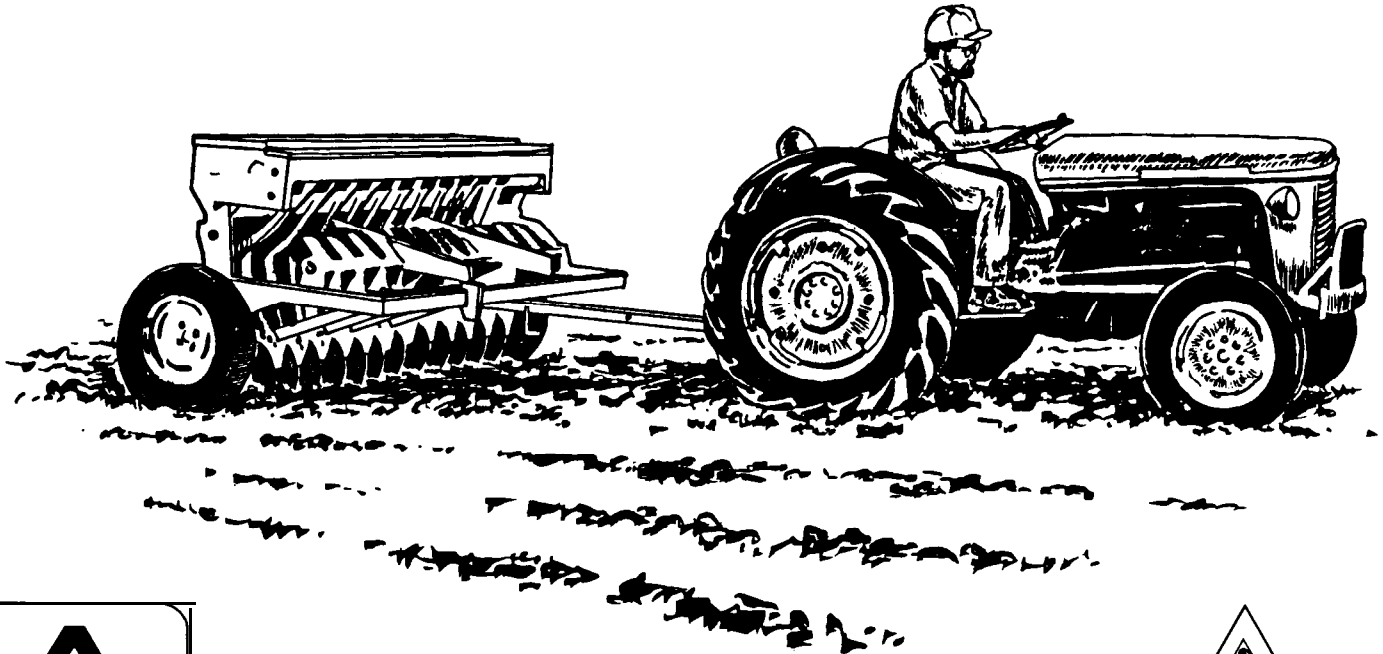


Establishing native warm-season grasses



The benefits to be derived from a stand of native warm-season grasses (NWSG) are many, but establishing and maintaining such a stand takes planning and care. Native grasses grow during warm weather (late spring and summer); most lawn and pasture grasses such as bluegrass and fescue grow during cooler weather (spring and fall). This difference in growing seasons requires different planting dates and maintenance. A commitment to proper planting and management is necessary to assure establishment of a native grass stand.

Buying Seed

Purchase native grass seed in Pure Live Seed (PLS) amounts. PLS is the seed that grows minus the trash. The PLS of any particular lot is found by multiplying the percent purity (P) by the percent germination (G) plus firm seed (F); $PLS = P(G+F)$. The PLS percentage times the bulk weight of the bag will give the pounds of PLS. Figures

for percent purity, percent germination and firm seed information are furnished by the seed dealer and usually are listed on individual seed sacks.

Seeding Rates

Plant according to the rates for either pure stands or mixtures (See Table 1). The most consistent yields and maximum wildlife benefits will be realized from mixed stands. Initial seed costs are high, but if properly seeded, one planting is all that's necessary. The rates in Table 1 are for drilled seed. Rates should be increased 25 percent when broadcasting the seed.

Seeding Dates

The best seeding dates are April through early June. Seedings in April may require herbicides or frequent early mowings for weed control.

Fall planting is not recommended until after November 1, when the soil has cooled to where NWSG won't sprout before spring. Seeding rate should be increased 25 to 50 percent to allow for seeds that will rot before spring.

Ground Preparation

Proper ground preparation is one of the most important aspects of establishing native grass. The seedbed should be firm, preferably cultipacked.

Plow deep in late fall to eradicate established vegetation; disc shallow to kill each new crop of sprouted weeds up to planting time. On soils other than heavy clay soil, cultipack once or harrow twice just prior to planting. On soils too shallow to plow, substitute heavy discing. Where practical, grow a cultivated crop for two years on sites having fescue before planting warm-season grass. The two years of cultivation will kill the roots of the cool-season grasses and provide a good seedbed for native grass.

Four techniques will reduce soil loss on erosion-prone sites while establishing native grass: (1) Seed the native grass into milo or soybean stubble in March-May. Leave the stubble standing after harvest, then mow to 4-6 inches prior to or after seeding. (2) Plant a cover crop of oats in the late summer or early fall. This will serve as a standing mulch into which the grass seed may be broadcast or drilled the next spring. Planting into green wheat has also been successful if the wheat is removed as hay or grain and is followed by favorable rainfall patterns. (3) No-till plant into a cool-season grass sod with a rangeland or no-till drill. The existing sod must be killed with Roundup or paraquat in the fall prior to spring seeding. A smother crop of forage sorghum or sudangrass is usually necessary to obtain a satisfactory kill of residual fescue tillers before the native grass is planted. (4) Add two pounds of redtop or timothy seed to the warm-season grass and plant early enough for the cool-season grass to sprout before the warm-season seed sprouts.

Planting Methods

Planting can be accomplished by either drilling or broadcasting. Certain no-till drills may be used to establish native grass if the seed has been **debearded**. A rangeland drill or converted farm drill is the most efficient means of planting native grass. Your local Soil and Water Conservation District (SWCD) may have a drill for rent to district cooperators. If not, check with the Missouri Department of Conservation, especially if your land is in prairie-chicken or pheasant range. Conservation Department drills are usually scheduled by February for April-June plantings.

Broadcast seeding is more efficient if debearded seed is mixed with P & K fertilizer or oats before spreading. A whirlwind seeder or fertilizer spreader can be used to plant many of the grasses. Cultipack before and after broadcast seeding. Care must be used to avoid planting too deep. Ideally, the seeds should be covered with no more than *one-fourth inch of soil*, but some exposed seed is good. **Do not harrow after seeding.**

Legumes

The addition of annual lespedezas to a native grass stand will increase forage yields without supplemental nitrogen fertilizer and may improve livestock performance. Wildlife use legumes (green browse and seed) as food. Kobe, Marion or Korean lespedeza, broadcast at 5 pounds per acre, is sufficient on sites throughout the state.

The best time to add lespedeza to a native grass stand is during January or February prior to the **third growing season** of the native grass.

Illinois bundleflower, a native legume, may be planted at 1/4 to 1/2 pound per acre with the grass seed.

Fertilizer

For successful establishment, soil test and apply needed phosphorus, potassium and lime prior to seeding. **Do not apply nitrogen.** A pH of 5.5 to 6.5 is preferred. Some varieties may require a pH of at least 6.0. For top forage production, soil test the third growing season and apply needed nutrients annually thereafter in **mid-May**.

If legumes have been added to the stand, nitrogen fertilizer need not be applied. The legumes will produce nitrogen for the stand and will be adversely affected by supplemental nitrogen.

In the absence of a soil test and legumes, an annual top dressing of 40-30-30 in mid-May will increase tonnage production and protein content of the forage. For plantings other than grazing or haylands where increased production is desired, fertilizer is usually not necessary except to restore plant vigor.

Management During Establishment

First Year

Seeded areas require close attention for early stand development. Weeds should not be allowed to grow more than 18 inches tall before mowing. Mow to a stubble height of 4 to 6 inches the first time, 6-8 inches the second time. After early August, either discontinue mowing or mow high enough to avoid cutting the new grasses which are developing their root systems.

In areas that can be grazed, "flash" or brief off-and-on grazing can be effective. The goal of "flash" grazing is to have cattle eat the weeds but not graze on the newly developing grasses. Stock the area with a number of animals that will consume competing weeds in a one or two-day period. **Do not leave livestock on the areas longer than two days a week.** Graze each new weed crop as it reaches 3 inches tall. *Stop such grazing by August 1* or earlier if weeds have been controlled.

Herbicides may be used effectively to control broadleaf weeds. In general, broadleaf plants are not a serious problem and provide some control over unwanted grasses. Since herbicides and application rates change from year to year, read all labels and follow their recommendations.

Grass seedlings may be seriously damaged by 2,4-D if the seedlings are not past the 4-5 leaf stage.

Table 1: Seeding rates for planting warm-season grasses. Rates are pounds of Pure Live Seed (PLS) pr acre.

Grass & Variety	Pure Stands		Mixtures	
	Pasture Hay	Dikes Levees	A ¹	B ²
Big Bluestem (Kaw, Rountree)	7.0 - 10.0		3.5	1.0-3.0
Indiangrass (Cheyene, Osage, Rumsey) (Nebraska 54, Oto-No. Mo.)	7.0-10.0		3.5	1.0-3.0
Switchgrass-Upland (Blackwell, Cave-in-rock, Trailblazer)	4.0-6.0	5.0-6.0		3
Switchgrass-Lowland (Alamo, Kanlow)	4.0-6.0	5.0-6.0		3
Little bluestem (Aldous)				0-2.0
Sideoats grama (El Reno)				0-2.0
Eastern gamagrass (Pete, IUKA, Shepard's PMK-24)	8.0			
TOTAL			7.0	6.0

¹Big bluestem and indiangrass mixture in any combination that totals 7.0 P.L.S. lb. will meet SCS specifications for ASCS cost-share.

²Mixture for forage and wildlife habitat plantings may include big bluestem and indiangrass in any combination that totals 4.0. Little bluestem and sideoats grama in any combination that totals 2.0. Higher rates of little bluestem or sideoats grama and lower rates of big bluestem and indiangrass may be used if desired but will not meet minimum rates for cost-share. Eastern gamagrass may also be added to mixtures at the owner's expense.

³Switchgrass is not normally used in mixtures except where hand seeded in wet spots or low areas. Check with local SCS or MDC office for other exceptions.

Second Year

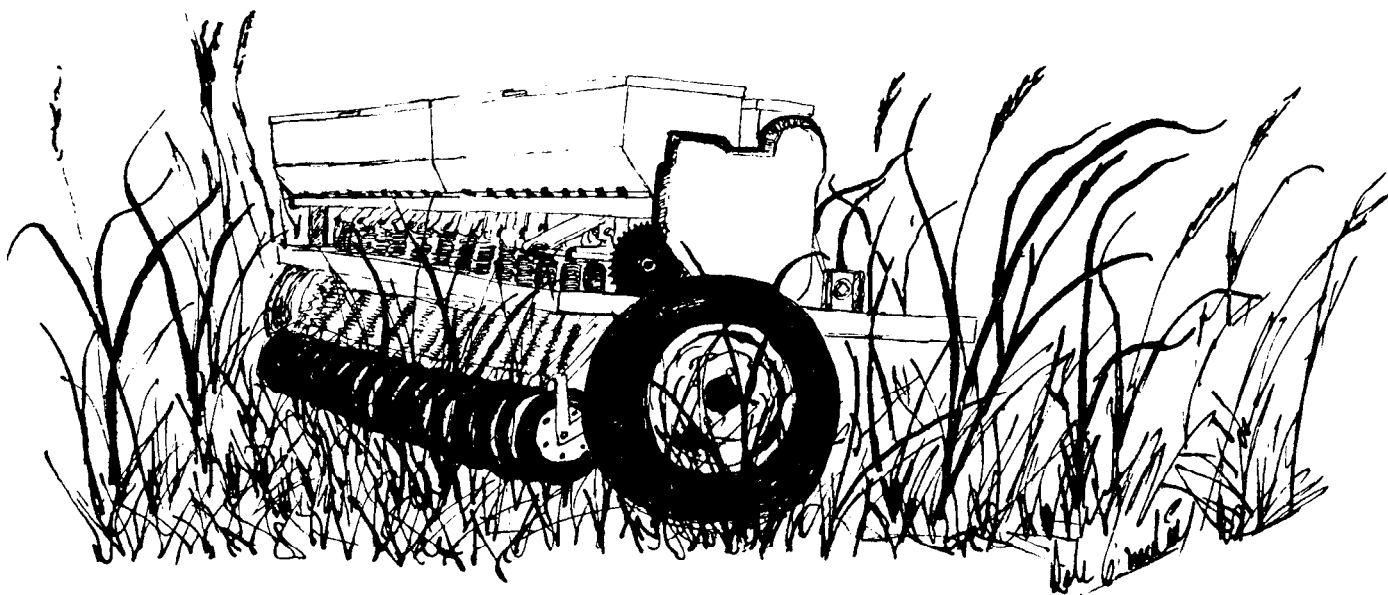
A prescribed burn is not advisable this year as it may make grassy weeds worse. Cool-season broadleaf weeds should be mowed in May, or early June. Maretail is a problem the second growing season and will canopy the grasses if not mowed.

A light cutting of hay or light grazing may be possible this year, but should not be done after July 15 or the early

boot stage of the grasses. Mowing of weeds or haying should not be done after August 1.

Third Year

In January or February following the second growing season, overseed the area with 5 pounds per acre of Korean, Marion or Kobe lespedeza. Normal use of the stand usually can be initiated this year.



Other brochures are available to aid you in the appropriate management of your native grass stand.

Seed Sources

For native warm-season grasses and forbs*

- ❖ Bamert Seed Company, Rt. 3 Box 1120, Muleshoe, TX 79347-1120, Phone: 1-800/262-9892
- ❖ Bluestem Seed Company, Grant City, MO 64456, Phone: 816/786-2401
- ❖ Hamilton Seeds, HCR 9 Box 138, Elk Creek, MO 65464, Phone: 417/967-2190
- ❖ Horizon Seeds, Box 81823, Lincoln, NE 68501, Phone: 402/475-1232
- ❖ J & J Seed Co., Rt. 3, Gallatin, MO 64640, Phone: 816/663-3165
- ❖ Johnston Seed Co., Box 1392, Enid, OK 73701, Phone: 405/233-5800
- ❖ Manglesdorf and Bros., Inc., P. O. Box 327, St. Louis, MO 63166, Phone: 314/535-6700
- ❖ Osenbaugh Grass Seeds, Rt. 1 Box 106, Lucas, IA 50151,

Phone: 515/766-6476

- ❖ Royal Seeds, Inc., 1212 West 18th St., Kansas City, MO 64101, Phone: 816/842-6830
- ❖ Sharp Bros. Seed Company of Missouri, 396 S.W. Davis Street-Ladue, Clinton, Mo. 64735-9058, Phone: 816/885-7552
- ❖ Stock Seed Farms, Box 112, Murdock, NE 68407, Phone: 402/867-3771

*Request current price information from above dealers. Names of local, smaller dealers may be obtained by writing the Conservation Department or Soil Conservation Service.

Other Native Grass Brochures

Available from the Conservation Department or U.S. Soil Conservation Service.

- 3 Native Grasses
- * Native Warm-Season Grasses for Wildlife
- * Native Warm-Season Grasses for Missouri Stockmen